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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,474	11/19/2003	Tomio Kumamoto	2927-0162P	3739

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EXAMINER

BLAU, STEPHEN LUTHER

ART UNIT PAPER NUMBER

3711

DATE MAILED: 07/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/715,474

Applicant(s)

KUMAMOTO, TOMIO

Examiner

Stephen L. Blau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,6,7 and 9-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,4,6,10 and 12 is/are allowed.
- 6) ☒ Claim(s) 2,7,9,11 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Canceling claim 3 is agreed with and the objection to under 37 CFR 1.75(c), is removed.

Claim Rejections - 35 USC § 112

2. The changes to the claims are agreed with and the rejections under 35 U.S.C. 112, second paragraph, are removed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 7, 9, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tennent in view of Yamamoto.

Tennent discloses a shaft comprising fiber reinforced resin layers, prepregs (Abstract, Col. 7, Lns. 7 through Col. 8, Lns. 27) disposed from the tip end to the butt

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end in the form of straight and angled layers forming the base rod (Ref. No. 24, Col. 3, Lns. 33-50), five prepregs disposed on the base rod in the form of 5-25 layers (Col. 3, Lns. 35-38), prepregs disposed on the tip side making up the straight and angled layer placed in succession, one of the three prepreg making up the straight layer and two of the three prepreg making up the angular layer with outside layers being straight (Col. 6, Lns. 1-4, Figs. 4-5, Col. 3, Lns. 40-46), a shaft having an outer diameter of 12 mm in at least one portion of a range from a tip thereof disposed at a head mounting side to a position located at 25% of a distance from a tip to a butt (Col. 4, Lns. 40-43), a reinforcing layer including a straight layer and an angular layer being formed in a range disposed from a tip to a position located at 25% of a distance from a tip to a butt, a prepreg disposed only on the tip side making up the straight layer (Ref. No. 34a, Col. 6, Lns. 1-4) and the angular layer (Ref. Nos. 34b, 34c, Col. 6, Lns. 1-4) in the form of the layers forming the hosel section (22) and flare section (20) around the base (24) (Fig. 1), addition parallel layers for outer layers (Col. 3, Lns. 45-50, Col. 6, Lns. 41-42) and area of prepregs disposed only on the tip side gradually decreasing from a tip side to a butt side in the form of plies cut in triangular shape producing a reverse taper (Col. 6, Lns. 43-66). Tennent does not disclose three prepregs disposed on the tip side making up the straight and angled layer, one of the three prepreg making up the straight layer and two of the three prepreg making up the angular layer, and the weight ratio between the straight and angular layers for reinforcement layers at a tip end. But clearly Tennent discloses plies 34 useable for the flare section (Col. 6, Lns. 1-4) and plies 34 placed in succession (i.e. 34a (straight layer), 34b (angled layer) and 34c (angled layer),

Col. 3, Lns. 40-45, Col. 6, Lns. 28-31) with outer layers being straight as desirable.

Therefore one skilled in making a reinforcement with sufficient longitudinal and torsional stiffness would have selected a suitable weight ratio between straight and angled layers and the number of prepregs and types in which a ratio of a weight of a straight layer to an angular layer being about .7 and three prepregs disposed on the tip side making up the straight and angled layer, one of the three prepreg making up the straight layer and two of the three prepreg making up the angular layer are included.

Tennent lacks an area of prepregs gradually decreasing from the butt side to the tip side of prepregs, a minimum value of EI being in a range of 1-2.5 kg x m², a ratio of a weight of a straight layer to an angular layer being .7-.8, and three prepregs disposed on the tip side making up the straight and angled layer, one of the three prepreg making up the straight layer and two of the three prepreg making up the angular layer.

Yamamoto discloses an area of prepregs gradually decreasing from the butt side to the tip side of prepregs (Fig. 2c (1A1, 1B1, 1B2, 1B3, 1B4)) and a shaft having a reinforced tip (Fig. 3c) having EI dip from about 3 to 2 kg*m² (Fig. 4). In view of the reference of Yamamoto it would have been obvious to have a dip in EI to a minimum value in a range of 1-2.5 kg*m² in order have sufficient rigidity for a tip portion of a shaft so excessive flexibility does not result in errors at impact of a golf ball. In view of the patent of Yamamoto it would have been obvious to modify the shaft of Tennent to have an area of prepregs gradually decreasing from the butt side to the tip side of prepregs in order to produce a base rod which tapers from a butt end to a tip end, has a

stiff butt end and minimizes the weight added to the shaft by having a lighter tip end, and a shaft formed of long plies.

It would have been obvious to modify the shaft of Tennent to have a ratio of a weight of a straight layer to an angular layer being .7 in order to have two angle layers for every straight layer inside and the outer layers being straight for the reinforcing fiber only at a tip end ensuring sufficient longitudinal stiffness when swinging a shaft at high speed.

It would have been obvious to modify the shaft of Tennent to have three prepregs disposed on the tip side making up the straight and angled layer, one of the three prepreg making up the straight layer and two of the three prepreg making up the angular layer in order to have sufficient longitudinal and torsional stiffness for a shaft.

Allowable Subject Matter

5. Claims 1, 4, 6, 10 and 12 are allowed. None of the prior art discloses or renders as obvious a straight layer consisting of a prepreg having reinforcing fiber with a tensile modulus of elasticity of 5-15 ton/mm², an angular layer consisting of a prepreg having reinforcing fiber with a tensile modulus of elasticity of 24-40 ton/mm² and prepregs disclosed only on the tip side make up the straight layer and angular layer in addition to the other elements of structure claimed.

Response to Arguments

6. The examiner made an error in the Office Action dated 2 March 2005 in believing that claim 8 depended on claim 1 as recorded in the Allowable Subject Matter section of that Action in paragraph 8. In reviewing this case it was determined that claim 8 being added to claim 2 was not allowable and as such the finality of the case was removed and a new final office action has been made.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

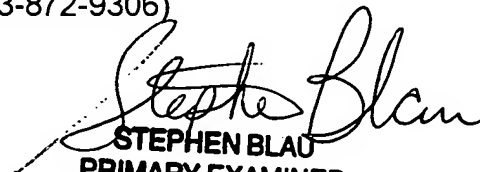
8. Any inquiry concerning this communication or earlier communications from the

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examiner should be directed to Steve Blau whose telephone number is (571) 272-4406.

The examiner is available Monday through Friday from 8 a.m. to 4:30 p.m.. If the examiner is unavailable you can contact his supervisor Greg Vidovich whose telephone number is (571) 272-4415. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0858. (TC 3700 Official Fax 703-872-9306)

slb/ 21 July 2005



STEPHEN BLAU
PRIMARY EXAMINER